**IT Applications Unit 3, AOS 1, Online Communities**

Complete the following, from pgs 3-14

**Networks are classified according to below and we will study the following:**

1. **Network Categories: LAN, WAN**
2. **Network Architecture, client-server; peer-to-peer; internet peer-to-peer; intranet**
3. **Network communication standards**
4. **Network hardware and software**
5. **Transmission media**
6. **Network security**

**What is a network?**

1. Describe the role of a network.  
   To connect multiple computers or devices.
2. What is groupware software? Provide an example.  
   Software that allows multiple users to access a file in real time.
3. Describe the nature of social networking sites.  
   To allow communication and sharing between users.
4. What is meant by real time?  
   Very little or no lag between users.

**Advantages of networks**

Elaborate under each of the following advantages of networks:

1. Resource sharing
   1. Internet connection  
      It’s cheaper to connect a network to an internet connection than to connect multiple devices to multiple internet connections.
   2. Printing  
      Allows multiple users to use the same printer.
   3. Software  
      Software can be installed onto a network rather than individual devices.
   4. Other resources including network-attached storage (NAS) servers
      1. Define a NAS server  
         A NAS server provides data storage to other devices in the network.
2. Remote Services
   1. Describe how a B2B network operates.   
      A B2B network connects businesses with an extranet.
   2. What is an extranet?  
      Essentially the same as an intranet except it isn’t confined to a single network.
   3. What are the advantages of a B2B situation?  
      It allows businesses to network with suppliers, partners and customers to share information.
   4. Describe the nature of EFTPOS.  
      EFTPOS is a device that directly debits a customer’s bank account at the point of sale.
3. Data and information sharing in organisations
   1. Outline how data and information sharing occurs through networks and how this is an advantage.  
      Any file stored by any computer can be accessed by any other computer, provided it has been granted access rights. This is an advantage because it means that computers in the network can have much smaller hard-drives, with all storage based in the network, therefore saving money.
   2. What is meant by the process of synchronising data?   
      Synchronising data is when all users make sure that they have the same data set and that it is up to date.
   3. How does this prevent data duplication?  
      This prevents data duplication because users can easily check each other’s data if they are using a network, rather than manually moving the data around.
4. Facilitating communications
   1. How do networks facilitate communications?  
      Networks facilitate communications through the use of the internet and internet-based services such as email or videoconferencing.

Types of networks, p 8

**1 Network categories**

1. Local Area Network, (LAN)
   1. Describe the nature of a LAN.  
      A LAN is a network that takes up a small geographical area, usually a single building, typically using copper cabling or 802.11 wireless.
   2. How has the advent of wireless technology changed the nature of the definition of a LAN?  
      It allows devices to move freely throughout the networks area and that devices located outside of a building can easily be connected.
   3. What is a Node?  
      A node is any device or computer that is connected to the network.
   4. How are LANS typically connected?  
      Copper cabling or 802.11 wireless.
   5. Describe a wireless LAN.  
      A wireless LAN is a LAN that uses wireless technology to send data between nodes, but may use cabling to connect to another wired network for greater speed.
2. Wide area network, (WAN)
   1. Describe the nature of a WAN including the transmission media.  
      A WAN is a network that connects at least two LANs , with a transmission medium that is not owned by someone who owns the LANs. Transmission media can include microwave, fibre-optic, telephone lines and satellites.
   2. List the different categories of WANs  
      - a metropolitan area network that covers a single city  
      - a statewide network  
      - a national area network  
      - a worldwide network
3. **Network architecture**
4. What is meant by network architecture?  
   Network architecture is how the network functions and is laid out .

Under each of the following three categories of network architecture answer the questions:

1. **Client-Server network**
   1. Describe the nature of this type of network.  
      The client-server network is set up so that the devices connecting to the network (clients), do not interact directly with each other, but instead with the computer that the network is set up on (the server).
   2. What is the role of a client?  
      The client connects to the server and sends information to the server.
   3. How does a server differ from an ordinary desktop computer?  
      A server is typically a lot faster and more powerful than an ordinary desktop computer, with a much larger hard-drive.
   4. Explain what is meant by multi-tasking?
   5. Describe the nature of each of the following types of servers:
      1. File server
      2. Print server
      3. Database server
      4. Web server
      5. Domain name server
      6. Proxy server
      7. Backup server
      8. DHCP servers
      9. Active directory domain controller server
      10. Virtual server
2. **Peer-to-peer network**
   1. Describe the nature of this network.
   2. What are the limitations of this type of network?
   3. How does a simple home network operate?
3. **Internet peer-to-peer network**
   1. Describe the nature of this network.
   2. How does a user set up for this type of network?
   3. What are the risks associated with this type of network?
   4. What is BitTorrent?
   5. Complete the Think about IT, 1.5 activity on pg 13.
4. **Intranets**
   1. Define an intranet.
   2. List the benefits of an intranet.
   3. Why must an intranet reside behind a firewall?